## DETAILED ACTION

### *Response to Amendment*

Applicant's amendment filed on January 19 2010 is acknowledged.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

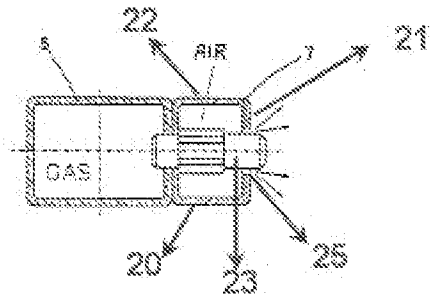
The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 37-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riepe et al 6,665,950 in view of Aldo 6,261,089. Riepe teaches the invention as claimed (fig 1-7). With regard to claim 37, 46 and 57 Riepe discloses an appliance for providing air and gas to a gas burner having a back tube 9 for receiving air and gas to be combusted, comprising: a gas tube 13 comprising an aperture (at 12); and wherein the aperture of the gas tube is provided with a first part (see fig 4) of a detachable connection device, for receiving a second part (fig 6) of the detachable connection

device provided on the back tube 9 for allowing gas from the gas tube to enter the back tube (column 4 lines 24-29). With regard to claim 46 Riepe also discloses a gas burner comprising a gas tube 13 comprising an aperture (through 12) for providing gas inwards to the back tube, the gas burner comprising: a radiant panel 1; and a back tube 9 for providing air and gas to the radiant panel, wherein the back tube has an orifice 30, 31 (with 17) for allowing air from the air tube 16 to enter inside the back tube, wherein the air tube 16 comprises opposing first and second wall regions (top and bottom of 16) connected by longitudinal wall regions (see fig 1) such that an inside space is enclosed by the first, second, and longitudinal wall regions (also for claim 37); wherein the back tube 9 is provided with a second part (fig 6) of a detachable connection device for receiving a first part (fig 4) of the detachable connection device present at the aperture of the gas tube. With regard to claim 57 Riepe also discloses at least one gas burner 1 comprising a radiant panel (column 2 lines 67-68).

With regard to claims 37, 46 and 57 Aldo teaches a gas burner comprising an air tube 7 comprising opposing first 21 and second (opposite 21) wall regions connected by longitudinal wall regions 20 and 22 such that an inside space is enclosed by the first, second, and longitudinal wall regions (see fig below); an aperture on the gas tube 5 and on the air tube wall opposite 21 for providing gas inwards to the air tube (see fig below), wherein the air tube comprises a first aperture 25 at the first wall region for receiving the back tube 23 of the gas burner such that the back tube extends through the first aperture 25 from outside the first wall region into the inside space (see below).




It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Riepe's appliance by having part of the back tube enclosed by the air tube in order to provide an appliance that is compact where the air in the air tube bathes the back tube and cools it. This also helps preheat the combustion air and this would lead to enhanced burner efficiency.

With regard to claims 38 and 58 Aldo also discloses wherein the aperture of the gas tube (through wall opposite 21) and the first aperture 25 of the air tube are substantially aligned (23 is straight, see fig above).

With regard to claims 39, 48 and 59 Riepe also discloses wherein the detachable connection device is a quick connect coupling (column 4 lines 24-26).

With regard to claims 42, and 43 and 62 Riepe also discloses wherein the first part of the quick connect coupling constitutes a female sleeve (see fig 4) for receiving a male tubular organ from the second part (see fig 6) of the quick connect coupling; wherein the female sleeve has in its internal peripheral surface at least one annular groove (where the spring is located) opened towards its interior, and wherein the groove is adapted to receive an annular spring 27 (see fig 7).

With regard to claims 40, 41, 50 and 61 the recitations “wherein the first part of the quick connect coupling constitutes a male tubular organ for being received by a

female sleeve from the second part of the quick connect coupling; and wherein the male tubular organ has on its external peripheral surface at least one annular groove opened outward towards its exterior, the groove being adapted to receive an annular spring" are deemed matters of rearrangement of parts that would not affect the functioning of the appliance. *In re Japikse, 181. F.2d 1019, 86 USPQ 70 (*CCPA 1950), MPEP 2144.04 VI C. Applicant is merely rearranging where the male and female organs are attached and where the groove and spring are located. The Applicant also acknowledged on page 9 lines 11-12 of the specification that the position of the two organs can be reversed.

With regard to claims 44 and 67, Riepe also discloses wherein the gas tube is located outside and adjacent to the air tube (see fig 1).

With regard to claims 44 and 67 Aldo also discloses wherein the gas tube is located outside and adjacent to the air tube (see fig above), wherein the air tube comprises a second aperture (opposite 25 where the back tube 23 enters the air tube) at the second wall region (wall opposite 21) for communicating with the aperture of the gas tube 5,

Riepe in view of Aldo would have the first part of a detachable connection device (at the end of the back tube 9) extend to the inside space of the air tube (such that the air tube encloses the air inlet into the back tube in order to let air into the back tube)).

With regard to claims 45 and 68 Riepe also discloses wherein the first part (fig. 4) of the detachable connection device is provided with at least one sealing gasket 28 for providing a gas-tight coupling between the first part and the second part (fig. 6) of the detachable connection device.

With regard to claim 55 the recitation wherein the second part of the detachable connection device is provided with at least one sealing gasket for providing a gas- tight coupling between the first and second parts of the detachable connection device is deemed a matter of rearrangement of parts that would not affect the functioning of the appliance. *In re Japikse, 181. F.2d 1019, 86 USPQ 70 (*CCPA 1950), MPEP 2144.04 VI C. Applicant is merely rearranging where the sealing gasket is located by locating it on the second part instead of on the first part as taught by Riepe.

With regard to claims 47 and 69, in Riepe modified by Aldo (where the air tube surrounds the back tube) the second part of the detachable connection device would be adapted to pass through the first aperture of the air tube in order to complete the connection to the source of gas 5.

With regard to claims 49 Riepe also discloses wherein the second part of the quick connect coupling constitutes a male tubular organ (fig 6) for being received by a female sleeve (fig 4) of the first part of the quick connect coupling.

With regard to claims 51 and 65 Riepe also discloses wherein the back tube 9 has at its back end a male tubular organ (fig 6), wherein the male tubular organ comprises a piece of tube 11 penetrating in the back end of the back tube, and wherein the piece of tube constitutes an injector for injecting gas into the back tube 9 (11 is a nozzle column 3 lines 31-32).

With regard to claims 52 and 66 Riepe also discloses, wherein the orifice 17 is provided at a level of the injector (see fig 3).

With regard to claims 53 and 54 the recitations wherein the second part of the quick connect coupling constitutes a female sleeve for being received by a male organ part of the quick connect coupling; and wherein the female sleeve has in its internal peripheral surface at least one annular groove opened towards its interior, and wherein the groove is adapted to receive an annular spring are deemed matters of rearrangement of parts that would not affect the functioning of the appliance. *In re Japikse, 181. F.2d 1019, 86 USPQ 70 (*CCPA 1950), MPEP 2144.04 VI C. Applicant is merely rearranging which one is the male and which one is the female part of the quick connect coupling as was disclosed by Riepe. The Applicant also acknowledged on page 9 lines 11-12 of the specification that the position of the two organs can be reversed.

With regard to claims 56 and 70 Riepe also discloses wherein the gas burner is an infrared radiant element (column 2 lines 67-68).

With regard to claims 60 Riepe also discloses wherein one the first and second of parts of the quick connect coupling constitutes a male tubular organ (fig 6), wherein the other of the first and second parts of the quick connect coupling constitutes a female sleeve (fig 4), and wherein the male tubular organ is adapted for being received by the female sleeve (see fig 3).

With regard to claims 63 the recitation wherein the male tubular organ has on its external peripheral surface at least one annular groove opened towards its exterior, and wherein the gas burner further comprises the annular spring being received in the annular grooves of the male tubular organ is deemed a matter of rearrangement of parts that would not affect the functioning of the appliance. *In re Japikse, 181. F.2d 1019, 86*

*USPQ 70 (*CCPA 1950), MPEP 2144.04 VI C. Applicant is merely rearranging where the groove and spring are located. Furthermore having the spring on the female and on the male is a matter of duplication of parts that would not result in any new or unexpected result. *In re Harza, 274 F.2d 699, 124 USPQ 378* (CCPA 1960). Riepe has the spring only on the female part.

With regard to claims 64 Riepe also discloses wherein the second part of the quick connect coupling constitutes a male tubular organ (see fig 6).

### ***Response to Arguments***

Applicant's arguments with respect to claims 37-70 have been considered but are not found persuasive.

Contrary to what Applicant stated, PTO considers 13 as the gas tube not 14. Examiner acknowledges that Riepe does not disclose an air tube that has a first aperture at the first wall for receiving the back tube. However Aldo discloses a gas burner comprising an air tube 7 comprising opposing first and second wall regions connected by longitudinal wall regions 20 and 22 such that an inside space is enclosed by the first, second, and longitudinal wall regions (see fig above); wherein the air tube comprises a first aperture 25 at the first wall region for receiving the back tube 23 of the gas burner, such that the back tube 23 extends through the first aperture from outside the first wall region into the inside space (see fig above). Riepe in view of Aldo discloses all the limitations of the claims.

Aldo's back tube 23 (shown for clarity in the fig above) is a tube leading gas from the gas tube 5 through the air tube to the burner inlet. Applicant's back tube does the same thing as well as provides mixing of air and gas. Riepe's back tube 9 leads gas from the gas tube 13 to the burner inlet and also provides mixing of air and gas inside 9. Riepe's back tube provides hole on its side 30 and 31 (see figs 4 and 6) through which air from the air tube is entrained. The only teaching borrowed from Aldo is to have the air tube enclose part of the back tube including the holes. The need to have air/gas mixture as taught by Riepe necessitates that the air tube should enclose the holes. The rationale for modifying Riepe's invention is not predicated on the function of Aldo's "nozzle 4" being changed because the teaching of "nozzle 4" was not borrowed. Riepe's back tube needs no modification. The rational for modifying Riepe's invention is to provide an appliance that is compact where the air in the air tube bathes the back tube and cools it. This also helps preheat the combustion air and this would lead to enhanced burner efficiency. Preheating the combustion air is a very desirable, cheap and well known method of increasing burner efficiency. Furthermore, enclosing the tube which carries air/gas mixture in an air tube is well known in the art (see for example Best 5,062,788 (fig 3).

One of ordinary skill in the art would consider the teaching of Aldo compatible with the teaching of Riepe because they are both concerned with burning premixed gas and air in a burner. The fact that one reference uses a radiant burner and the other does not is immaterial. The combination of Riepe and Aldo is proper.

A modification of Riepe's invention with Aldo's teaching of air enclosure would be operative since Riepe's back tube 9 already has apertures 30 and 31 (see figs 4 and 6) through which air from the air tube (after the modification) would be entrained into the back tube.

The discussions presented above also apply to independent claims 46 and 57 as well as all the claims dependent on claims 37, 46 and 57.

After due consideration it is determined that Applicant's claims do not distinguish Applicant's invention over the prior art of record.

## *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUKA C. NDUBIZU whose telephone number is (571)272-6531. The examiner can normally be reached on Monday - Friday 8.30 - 4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Rinehart can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuka C Ndubizu/
Examiner, Art Unit 3743

/Kenneth B Rinehart/
Supervisory Patent Examiner, Art Unit 3743

20100408